



Prepared under the authority of the Washington Metrorail Safety Commission:

Chair Christopher Hart, Vice Chair Greg Hull, Secretary-Treasurer Debra Farrar-Dyke,
Robert Bobb, Mark Rosenker, John Contestabile
Alternates: Christopher Geldart, Michael Rush, Suhair Al Khatib

Report produced by WMSC staff led by CEO David L. Mayer, PhD

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The Washington Metrorail Safety Commission

Safety Audit

of the Washington Metropolitan
Area Transit Authority

Audit of Roadway Worker Protection
and Training



Final Report:
June 18, 2020

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Executive Summary

RWP is the primary method of protecting employees, contractors and, in emergencies, first responders and customers who need to be on or near the tracks.

Metrorail's Roadway Worker Protection (RWP) program, policies and procedures are the primary method of protecting employees, contractors and, in emergencies, first responders and customers who need to be on or around the tracks. The Washington Metrorail Safety Commission (WMSC) concludes that there has been progress in implementing the Roadway Worker Program since the Federal Transit Administration (FTA) raised concerns in 2015, but that additional steps are required.

A significant finding in the 2015 Safety Management Inspection (SMI) was that "WMATA's maintenance and operations departments faced significant challenges in ensuring their personnel are scheduled to receive the required Roadway Worker Protection (RWP) refresher and re-certification training." At the time, WMATA records showed Metrorail had fallen significantly behind in meeting WMATA's stated annual requirements for RWP refresher training and biennial requirements for re-certification training for Level II and Level IV qualified individuals. In this RWP Audit, the WMSC noticed a vastly improved process underway to ensure initial and refresher training requirements were being communicated to supervisory staff for operations and maintenance departments, helping to ensure affected Metrorail employees maintain consistent compliance with RWP qualification requirements.

WMATA has updated its RWP manual and program twice since the 2015 FTA SMI, first in April 2017 and again in September 2018. Major changes included an Advanced Mobile Flagger (AMF) rule intended to add an additional layer of protection by requiring face-to-face communication with a train operator, and a broader update of the entire RWP program.

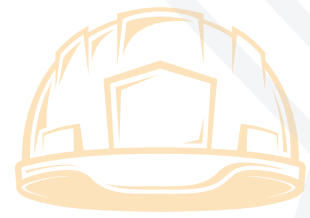
Still, the WMSC concludes that there are ongoing safety gaps in the Roadway Worker Protection program that Metrorail must address.

The Washington Metrorail Safety Commission finds that there are at least pockets within WMATA where Roadway Worker Protection rules are regularly not being followed, which can lead to injuries, accidents and fatalities.

To ensure the safety of employees, contractors and others on the tracks, the Washington Metrorail Safety Commission is issuing 11 findings requiring Metrorail Corrective Action Plans to address shortfalls on policy, procedure or real-world implementation of the system's RWP program. Metrorail's Corrective Action Plans, which will need to be approved by the WMSC, must ensure that all RWP procedures, equipment and training lead to a consistent and reliable Roadway Worker Protection program that ensures the safety of everyone on the Metrorail right of way.

Site visits specific to this audit in November 2019 and separate observations from ongoing regular inspections have shown that certain critical WMATA safety rules





are not regularly followed, including the requirement that a watchman/lookout be positioned at least 50 feet ahead of a work crew so that the lookout can provide ample time for crews to get out of the way in the event a train is approaching.

Electrical safety warning equipment is being used without current calibration certification, which could put workers at risk. Some workers are not meeting all personal protective equipment (PPE) requirements because they are not wearing proper reflective vests or are covering those vests with backpacks, which poses an additional risk of entrapment.

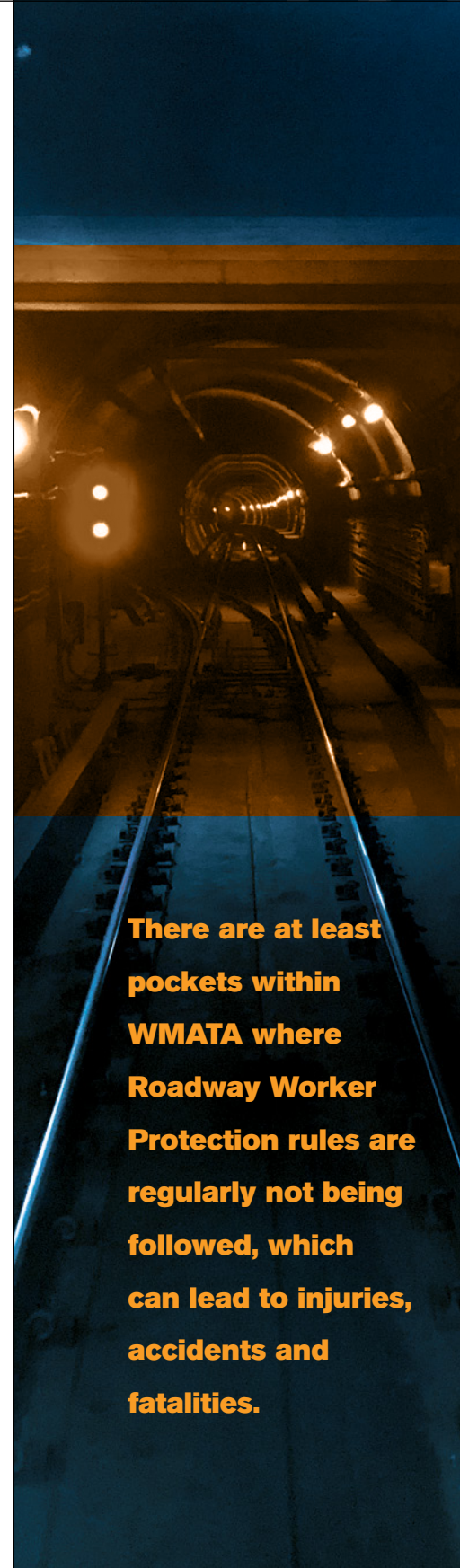
Metrorail's higher-level RWP training classes are lacking in consistency and practical exercises, and the instructors for those classes are not being given the opportunity to meet their own requirements for continuing education and experience.

Although Metrorail has policies in place requiring regular reviews of RWP Standard Operating Procedures (SOP), including input on those rules, by its Safety Department (SAFE) and Metro Transit Police (MTPD), Metrorail could not demonstrate that those reviews are occurring and, in some cases, departments said they were unaware of those responsibilities.

Metrorail also must create a clear definition of a train approaching an area where foul time has been granted to allow track access, to ensure that each approaching train operator is properly warned of the reason for a red signal ahead. This will ensure the intent of a redundant layer of protection is actually achieved.

Findings:

1. WMATA employees are not consistently following Roadway Worker Protection Rule 5.13.6 for watchman/lookout placement, placing work crews at risk.
2. SAFE has not conducted the biennial independent audit of RWP described in Section 3.3 of the RWP Training SOP, and this audit responsibility is described only in Technical Skills Maintenance Training (TSMT) documentation..
3. RWP classes for Level II and Level IV and the requalification for both do not provide sufficient practical experience or testing to ensure that these workers who are critical to safe operations under RWP rules truly understand the importance and function of key safety equipment.
4. WMATA employees are not consistently following Personal Protective Equipment (PPE) requirements for personnel entering or traversing WMATA's roadway.



There are at least pockets within WMATA where Roadway Worker Protection rules are regularly not being followed, which can lead to injuries, accidents and fatalities.



- 5.** WMATA employees are not consistently following RWP Rule 5.12 for equipment calibration.
- 6.** WMATA does not have a clear definition of a train “in approach” to a foul time area, which leads to inconsistent use of checklists and inconsistent radio communication that could cause a train operator to be unaware of work crews on the tracks ahead.
- 7.** WMATA's TSMT department has not reviewed its RWP SOP annually as required.
- 8.** The responsibility for RWP contractor training does not follow the RWP SOP Section 2.2.
- 9.** Practical exercises and testing in RWP classes are not standardized, which could lead to workers getting Level II or Level IV certification without proper instruction.
- 10.** RWP Instructors are not consistently participating in required three-hour experiential visits in the ROCC as specified in Section 7.5 of the RWP SOP.
- 11.** WMATA has not submitted the RWP SOP and other relevant material to SAFE and MTPD for review as required.

Metrorail has 45 days to propose specific Corrective Action Plans to address these issues.

The WMSC produced this audit of WMATA'S Roadway Worker Protection (RWP) Program and training based on interviews of WMATA personnel, reviews of WMATA safety policies and procedures, reviews of RWP records and other documents, and observations of field inspection activities conducted by various personnel requiring roadway access.

The audit is part of the WMSC's triennial audit process. The Federal Transit Administration (FTA) requires a designated State Safety Oversight (SSO) agency to oversee safety programs for rail transit agencies within its jurisdiction, including an on-site safety audit of each element of the agency's safety plan and referenced procedures at least once every three years. The Washington Metrorail Safety Commission is the independent agency certified pursuant to Title 49 Code of Federal Regulations (CFR) Part 674 as the SSO agency that conducts the safety audits of the Washington Metropolitan Area Transit Authority (WMATA) Metrorail system.



Background and Scope

Background and Scope

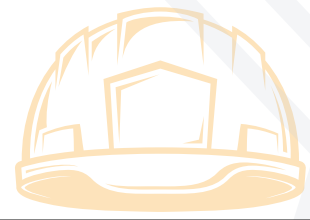


This audit covers Metrorail's Roadway Worker Protection program, including components of WMATA's 2018 System Safety Program Plan (SSPP). The SSPP is a document created by WMATA and signed by its chief executive. The SSPP outlines activities that WMATA undertakes to ensure the safety of its customers, employees and emergency responders. The SSPP describes the management structure, roles and responsibilities, policies, procedures, and rules governing all activities necessary to conduct safe operations on Metrorail, including inspection and maintenance practices. Element 13 (Rules Compliance) and Element 16 (Training and Certification) of the SSPP are especially instructive in guiding this audit and allowing the WMSC to measure WMATA's performance against WMATA's commitments to uphold and improve safety.

The specific rules for the RWP program are contained in the Metrorail Safety Rules and Procedures Handbook (MSRPH) section 5, Roadway Worker Protection (RWP). Additionally, written requirements for Roadway Worker Protection training are maintained by operations and maintenance departments. Training plans, the training curriculum and training records substantiating compliance with requirements were also used in this WMSC audit.

The WMSC began its audit in November 2019 and received follow-up documentation through late December 2019. The WMSC consisted of the following audit activities:

- Obtaining and reviewing the most up-to-date plans, policies, and procedures governing the Roadway Worker Protection program and related training
- Conducting an opening conference to explain the audit process and schedule
- Interviewing employees from Track and Structures (TRST), Automatic Train Control (ATC), Traction Power Maintenance (TRPM), Car Maintenance (CMNT), Rail Transportation (RTRA), Operations Management Services (OPMS) and other pertinent management responsible for Roadway Worker Protection
- Observing Technical Skills Maintenance Training (TSMT) personnel instructing RWP Level II and Level IV classes
- Observing Safety and Environmental Management (SAFE) personnel instructing an RWP Level I class
- Observing TRST employees conducting Advanced Mobile Flagger (AMF) duties



- Reviewing a sample of Foul Time Checklists from the Rail Operations Control Center
- Reviewing a sample of training records specific to initial and refresher training for Roadway Worker Protection
- Evaluating compliance with established plans and procedures, based upon the above sources of information
- Conducting an exit conference to explain initial findings and outstanding items for follow-up
- Sharing a draft audit report with WMATA and considering comments received during the preparation of this final report

Personnel Interviewed

RTRA

- Vice President of Rail Transportation
- Director, Rail Operations Control Center
- Manager, Operations Support
- Track Access Maintenance Construction Coordinator

SAFE

- Executive Vice President – SAFE
- Manager, Rail and Facilities Safety
- Performance Monitoring Officer

Metro Transit Police/ Office of Emergency Management

- Director Emergency Management
- Emergency Management Coordinator
- Manager Emergency Operations
- Sgt. MTPD Training
- Senior Fire Life Officer

TSMT/OPMS

- Director, Technical Skills Maintenance Training
- Managing Director, OPMS

Other Personnel

- ROCC Controllers
- Train Operators
- CMNT Road Mechanics
- RWP Instructors



Metrorail **RWP Program**



Documents Reviewed by the WMSC

In addition to field visits and interviews, a wide range of documents associated with Roadway Worker Protection rules related activities was reviewed as part of this audit. These documents included training records, training materials, inspection forms, inspection records, correspondence, policies and procedures such as:

- ▶ RWP SOP (as of April 29, 2019)
- ▶ RWP Training Protocols and Evaluation Criteria
- ▶ Level I: Initial Facilitators Workbook; Day 1 Class Progress Checklist; Course Evaluation Form; Syllabus; Lesson Plan; Initial Student Workbook
- ▶ Level II: REQUAL Syllabus; REQUAL Student Workbook; REQUAL Class Progress Checklist; Initial REQUAL Facilitator; Requalification Lesson Plan
- ▶ Level IV: REQUAL Course Evaluation; REQUAL Facilitators Workbook; REQUAL Syllabus; REQUAL Lesson Plan; REQUAL Student Workbook; REQUAL Class progress Checklist; Evaluation Form; Syllabus; Class Progress Checklist; Initial Lesson Plan; Initial Student Workbook; Initial Facilitators Workbook
- ▶ RWP Track Audit Forms
- ▶ MSRPH Issuance and Update Bulletin
- ▶ MSRPH Rulebook Committee Membership
- ▶ MSRPH Section 5 - Roadway Worker Protection
- ▶ RWP Quick Access Guide
- ▶ RWP Rule Compliance Assessment Procedures
- ▶ RWP Demand 2016-2019
- ▶ RWP Training Report for Oct. 1, 2019
- ▶ Out of Compliance Report as of Oct. 1, 2019
- ▶ RWP Population Monthly Charts, Oct. 2019
- ▶ RWP Rule Compliance Assessment Examples
- ▶ Job Safety Briefing Form
- ▶ PO T-18-07
- ▶ General Orders and Track Rights System (GOTRS) Requests, Sept. 15-30, 2019
- ▶ GOTRS Work Plan
- ▶ Good Faith Challenge Form
- ▶ RWP Certification Records for Train Operators
- ▶ Administrative Procedures and In-Effect special orders

The audit was conducted as part of the WMSC's triennial audit process under FTA regulations in Title 49 CFR Part 674. The regulations require State Safety Oversight agencies, like the WMSC, to conduct an audit of each element of the rail transit agency's safety plans and referenced procedures at least once within a three-year period. The WMSC audits each element of WMATA's safety plan by conducting separate topic-area audits over the course of a three-year period.

Any findings that are currently being addressed or required to be addressed by other Corrective Action Plans that Metrorail is in the process of implementing were not repeated in the findings section of this audit.

Metrorail RWP Program



Between 2005 and 2010, eight Metrorail employees were struck and killed by oncoming trains while on the right of way.

Between 2005 and 2010, eight Metrorail employees were struck and killed by oncoming trains while on the right of way. Two investigations by the National Transportation Safety Board (NTSB) concluded that the probable cause of those accidents was the failure of the on track Metrorail employees to maintain an effective lookout for trains and the failure of the train operator to slow or stop the train until the train operator could be certain that the workers ahead were aware of its approach and had moved to a safe area. The NTSB concluded that Washington Metropolitan Area Transit Authority Metrorail right-of-way rules and procedures that did not provide adequate safeguards to protect wayside personnel from approaching trains, that did not ensure that train operators were aware of the wayside work being performed, and that did not adequately provide for reduced train speeds through work areas contributed to these accidents. (Accident No. DCA-06-FR-005, [Railroad Accident Brief NTSB-RAB-08-01](#); Accident No. DCA-07-FR-004, [Railroad Accident Brief NTSB-RAB-08-02](#)).

In 2010, WMATA introduced a completely overhauled Roadway Worker Protection program that mirrored key features of similar programs regulated by the Federal Railroad Administration (FRA) that had been in place for several decades.

Metrorail's Roadway Worker Protection (RWP) program lays out a uniform method of establishing on-track protection and other steps like personal protective equipment (PPE) required to mitigate dangers and hazards associated with working on the Metrorail right of way.

Depending on the location and tasks to be performed on the right of way, there are differing levels of protection ranging from the granting of Foul Time to Exclusive Track Occupancy.

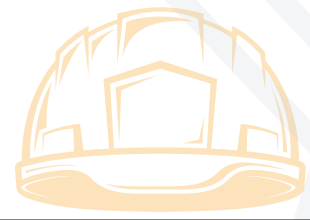
Each employee and each contractor must be trained and qualified in RWP before entering WMATA's Roadway. The appropriate level of training is determined by the individual's duties. Each level requires a written and practical exam to successfully demonstrate competency. Requalification is required every two years.

RWP Level I:
Restricted Level

RWP Level II:
Limited Access Level

RWP Level IV:
Roadway Worker
In Charge

(There is no Level III training)



In response to several serious rail accidents and the accompanying concerns regarding Metrorail's safety performance, the U.S. Department of Transportation's Federal Transit Administration (FTA) conducted an organization-wide Safety Management Inspection (SMI) of the WMATA rail and bus transit systems in 2015. The [FTA found](#) that "WMATA's maintenance and operations departments face significant challenges in ensuring their personnel are scheduled to receive the required Roadway Worker Protection (RWP) refresher and re-certification training"(2015 FTA SMI Report, Page 46). At the time, WMATA records indicated that the RWP training program had fallen significantly behind in meeting annual requirements for RWP refresher training and biennial requirements for re-certification training for Level II and Level IV qualified individuals. Records provided by Metrorail for this audit show significant improvement in this area.

**Records provided
by Metrorail
for this audit
show significant
improvement in
RWP recertification
compliance.**

Advanced Mobile Flagger (AMF)

In 2017, WMATA made enhancements to its RWP program with the advanced mobile flagging process. This process deploys a worker at the Metrorail station that precedes each mobile work crew that is on the right of way. This worker is referred to as the Advanced Mobile Flagger (AMF). This AMF flags the train to a stop when it enters the station and warns the train operator of the work crew ahead. The train operator is then to proceed at half the regulated speed until the train operator encounters the work crew, at which point the operator is to stop the train. The train is only allowed to move past the crew when the operator receives acknowledgement from the work crew. The AMF is a watchman/lookout with the same requirement of a Level II or higher RWP qualification who serves in addition to the watchman/lookout(s) with the work crew. The sole duty of the watchman/lookout with the work crew is to watch for approaching rail vehicles and provide ample time and warning to roadway workers so that they can reach a place of safety when required. Both the AMF and any watchmen/lookouts act under the guidance of the Roadway Worker in Charge (RWIC). A RWIC is an escort and crew leader who provides and is responsible for RWP safety protections to all personnel on the roadway as part of their work crew. The RWIC is responsible for identifying and resolving all roadway worker safety concerns, rule compliance, and oversight of all aspects of RWP to support the work being performed within their working limits. The RWIC must be Level IV qualified.

Prior to any work on the right of way, the designated Roadway Worker in Charge (RWIC) conducts a job safety briefing covering hazards on the right of way, emergency assistance and other information, and verifies all employees under the RWIC's protection have the correct RWP qualifications and are wearing all of the requisite personal protective equipment (PPE) mandated by the RWP policy.





In addition to the WMATA Safety Hotline, Metrorail employees are also able to report unsafe activities anonymously to Close Call Reporting via the U.S. Department of Transportation's Bureau of Transportation Statistics.

Metrorail Safety Rules and Procedures Handbook

Also in 2017, Metrorail conducted a broader review and update of RWP permanent orders, and the RWP handbook was integrated into the Metrorail Safety Rules and Procedures Handbook (MSRPH) in an effort to reduce confusion by having only one roadway rule book.

In early fall of 2018, Metrorail conducted a safety stand down to communicate all of the new RWP rule modifications that has been instituted.

WMATA has created an internal WMATA Safety Hotline, and established an anonymous Close Call Reporting program through the U.S. Department of Transportation's Bureau of Transportation Statistics. Ongoing RWP information is communicated to employees by either Safety Bulletins or Employee Reporting Newsletters.

Metrorail employees can also report safety concerns to the [WMSC](#) through a [web form](#), email or phone call and on [social media](#).

Hot spots

Other steps taken since 2017 to address worker safety hazards included a survey of the rail system to review all areas for track hot spots. A hot spot is a high hazard area for roadway workers that requires special precautions, such as Foul Time, to pass through. Several new hot spots were identified (e.g., near National Airport). These additional hot spots were added to the revised Track Access Guide. This guide has been modified to include system maps that would more easily identify the level of protection required for a given section of track. This protection level is currently communicated to roadway workers by chain marker notations with no map reference. Lone workers are no longer able to walk track on the mainline without being granted Foul Time (requesting and receiving ROCC assurance that all train movement has been stopped in a specified location), which greatly increases their level of protection.

RWP Training Compliance

WMATA has made steady progress to ensure those on the roadway receive the required level of training. The RWP training group worked with other Metrorail personnel to right-size RWP certifications to ensure that the appropriate level of RWP training and qualification was applied to each Metrorail employee and their roadway responsibilities. Training compliance management reports are sent weekly to supervisors. These reports highlight those employees who need to be recertified prior to entering the roadway. Based on documents provided as part of this audit, these efforts have led to a close to a 100 percent training compliance rate.



General **Assessment**

General Assessment

Some roadway workers expressed concerns about excessive radio wait times.

Roadway Access and Training

Training records show that employee compliance with RWP recertification requirements has improved significantly compared to past oversight audits of training compliance. This has coincided with additional, routine reporting and metrics on RWP training compliance from the Office of Operations Management Services (OPMS). The 2015 FTA Safety Management Inspection noted that “At the time of the SMI, electronic records provided by Technical Skills & Maintenance Training, the department responsible for the RWP training program, showed that exactly 2,500 WMATA employees had not received the required annual refresher training, and 295 employees had not been recertified and/or requalified as specified in WMATA’s RWP Manual and Program.” This led to the 2015 FTA SMI finding “Maintenance and Operations Departments have not ensured the RWP training program is being conducted as required. Annual refresher and biennial re-certification requirements for Level II and Level IV are behind schedule.”

In this audit, frontline personnel like train operators, station managers and track maintainers interviewed from several departments expressed satisfaction with current training content. There was universal praise regarding clear communication from Rail Operations Control Center (ROCC) Controllers.

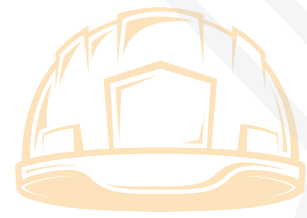
However, some roadway workers expressed concerns about excessive radio wait times. Because workers must wait for permission to access the roadway, the waits can limit productive time and leave them exposed to harsh weather conditions for longer periods than necessary. Some suggested the use of additional radio channels, if possible, to make their work more efficient.

RWP Safety Events

In the month of November 2019, the WMSC received three notifications relating to non-adherence to RWP procedures: a train operator who did not stop for an AMF, a train operator who did not reduce speed and sound the horn while approaching a roadway work crew, and a train operator who passed a mobile work crew at excessive speed. The events are consistent with other observations and inspections the WMSC has conducted outside the scope of this audit. The WMSC will continue to monitor and investigate these types of events as part of its safety oversight program.

The WMSC verified that WMATA’s Quality Assurance, Internal Compliance and Oversight (QICO) department conducts in-depth quality assurance audits of the Roadway Worker Protection requirements. QICO follows up on outstanding findings and action items through resolution and reports the status of those action items.





Findings and Required Corrective Actions

The Washington Metrorail Safety Commission finds that there are at least pockets within WMATA where Roadway Worker Protection rules and processes are regularly not being followed, which can lead to injuries, system damage and even deaths.

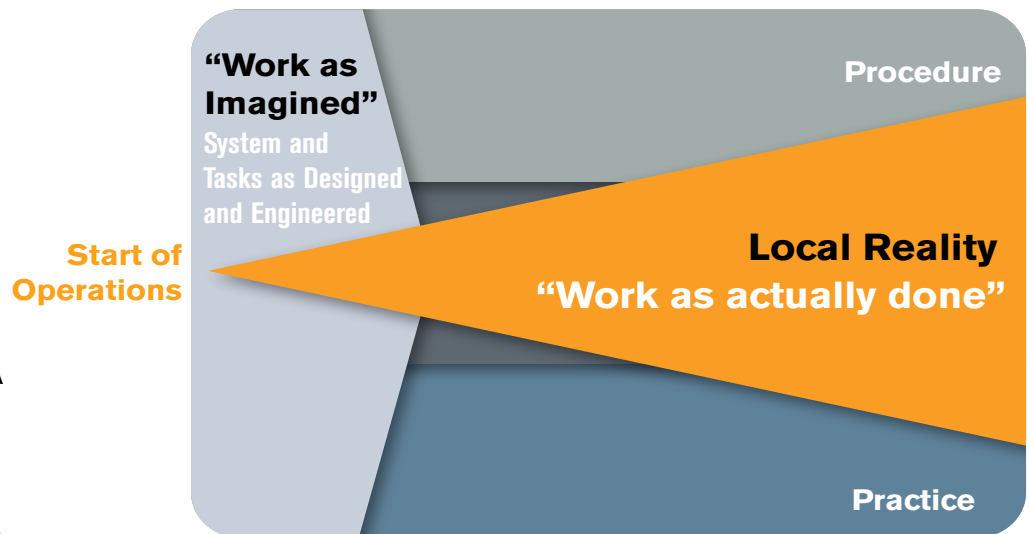
WMATA must take corrective action to minimize “practical drift” from official written procedures over time, to ensure that these critical safety rules are adhered to each and every day.

Some of the issues involve procedures or policies that WMATA told the WMSC may be outdated; however, WMATA must ensure that any updates maintain the same level of safety established when the requirements were created based on agency experience and industry guidance. If changes to these procedures and policies are needed to be responsive to the changing landscape of Metrorail operations, that must only be done by officially assessing such changes to ensure no unintended hazard is being introduced and then officially issuing revised policies and procedures in a standardized fashion that covers all those on the roadway. This will ensure uniform and reliable level of safety performance in RWP.

Metrorail’s current written RWP requirements covering training, rules, quality control and process reviews are generally sound. These written policies and procedures exist to provide a uniform level of protection and a reliable expectation of safety for all personnel on the roadway.

Findings in this report refer to instances of WMATA operating out of compliance with an applicable written requirement, plan, policy, rule, standard, or procedure. A finding may also refer to a condition whereby WMATA may technically be conducting business in compliance with existing industry best practice, but there is no relevant written plan, policy, or procedure in place, or to a case where the existing practice either is not documented or may present a potential hazard. Each finding has an associated corrective action that WMATA must address as part of its proposed Corrective Action Plan(s).

Gaps can grow between procedure and practice



WMATA must ensure that any RWP updates maintain the same level of safety established when the requirements were created and do not introduce any unintended hazards.

Finding 1:

WMATA employees are not consistently following Roadway Worker Protection Rule 5.13.6 for watchman/lookout placement, placing work crews at risk.

This rule states that a watchman/lookout must be a minimum of 50 feet in advance of the mobile work crew. In numerous independent observations in various parts of the WMATA Rail System, and again during field inspections conducted on the Red Line on November 19-20, 2019 specifically for this audit, WMSC Inspectors observed that the watchman/lookout was in arm's length of the work crew and was not focused solely on worker protection from the required 50 feet ahead and in a place to warn the work crew of trains approaching the work location. If adequate time and warning is not provided, crews may not be able to safely clear the tracks and risk being struck by a train.

Corrective Action: WMATA must institute appropriate measures such as weekly compliance checks to ensure proper procedures of RWP Rule 5.13.6 are followed regarding distance requirements for the watchman/lookout.

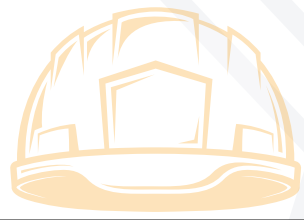
Finding 2:

SAFE has not conducted the biennial independent audit of RWP described in Section 3.3 of the RWP Training SOP, and this audit responsibility is described only in TSMT documentation.

RWP SOP section 3.3 states "The office of SAFE will conduct an independent audit review every two years validating standard operating procedures are being followed and that the redundant stand-alone database is current." WMATA did not provide documentation that this audit has been completed and could not verify that such a review had ever been completed. This is a repeat finding (FTA-TSR-18-009). Such a review is important to verify that all rules are meeting the safety requirements of the system to keep employees, contractors and others safe. WMATA rules and procedures directed these reviews to be conducted in the past by SAFE's Internal Safety and Security Review (ISSR). The ISSR responsibility was transferred to QICO on its creation in 2017, however QICO is also not conducting this audit. Monitoring of the RWP training program is important to ensure that RWP procedures are updated and carried out effectively.

Corrective Action: Metrorail must schedule and complete the biennial independent audits as described in the RWP Training and update all relevant documents regarding the departmental responsibility for this audit. In addition to noting any change to the audit responsibility in the SOP, SAFE or QICO should ensure that this audit requirement is fully explained in its Public Transportation Agency Safety Plan (PTASP), and/or a SAFE/QICO policy or procedure.





Finding 3:



RWP classes for Level II and Level IV and the requalification for both do not provide sufficient practical experience or testing to ensure that these workers who are critical to safe operations under RWP rules truly understand the importance and function of key safety equipment.

The courses fail to include explicit instruction and testing on how to install safety devices like Warning Strobe Alarm Devices (WSADs) (used whenever third rail power is deenergized to monitor for the inadvertent restoration of power), and do not include instruction on the proper installation, placement or reason for use of derailleurs or wood ties to establish a work zone under inaccessible track (the physical barrier prevents rail vehicles from entering the work zone by derailment, stopping, and other means). Without clear instructions, the protection may not be properly established or larger safety events could be created. For example, a derailler should not be placed on an aerial structure, since it could push a train or other vehicle off the side of a bridge. Full explanation, demonstration and testing of the use of an Amber Lantern/E-Flare (used by AMF to mark his or her position on the station platform and serve as a visual warning indicator to rail vehicle operators on approach to a station platform), Hot Stick Tester/Voltage Awareness Device (used to verify that the third rail is deenergized), Shunts (results in the associated track showing occupancy as if a train was occupying the location), "W" Disk (warns roadway workers at a fixed location of an approaching roadway vehicle to provide roadway workers ample time to move to a place of safety), and AMF and watchman procedures were not provided in any classes observed during the inspections conducted in October and November 2019 by the WMSC staff. WMATA is currently using derailler and wood tie protection for work zones with no formal training or procedures, which presents a safety hazard for field activities.

Corrective Action: WMATA must develop a formal procedure for the training and demonstration of all RWP Safety Equipment and Warning Devices. The procedure must include a standardized checklist for instructors to follow during the practical demonstration, including a requirement that each student physically demonstrates the ability and understanding to use each device or other piece of equipment.

Finding 4:

WMATA employees are not consistently following Personal Protective Equipment (PPE) requirements for personnel entering or traversing WMATA's roadway.

The PPE rules are defined in the WMATA MSRPH Section 5, subsection 5.11. In prior independent observations in various parts of the WMATA Rail System, and again during WMSC Inspectors' field observations conducted on November 19-20, 2019, on the Red Line, the WMSC determined that WMATA employees were not

Finding 5:



Finding 6:

wearing the required hard hat, safety glasses, and reflective outer safety garment displaying the reflective X-stripe pattern on the rear of the jacket while conducting their job functions on the right of way. Personnel were observed wearing backpacks that obstructed the view of the required safety vest and that present an entrapment hazard. SAFE said backpacks are not permitted, however could not cite a rule barring the practice.

Corrective Action: Weekly compliance checks should be instituted by WMATA to ensure employees follow the rules and are wearing the required PPE. WMATA must also codify the policy, stated in WMSC interviews with SAFE, that prohibits the wearing of backpacks on the roadway due to the risk of entrapment.

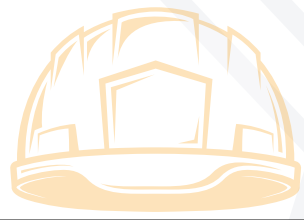
WMATA employees are not consistently following RWP Rule 5.12 for equipment calibration.

The rule states that prior to use, all safety equipment must be inspected, tested and in good working order. Any certified safety or work equipment must clearly display a current certification date on the device. During the November 2019 field inspections, two roadway work crews were using Warning Strobe Alarm Devices (WSADs) that were past their calibration date. After that date, there is no way to reliably say that the devices are working properly to keep work crews safe. WSADs are used whenever third rail power is deenergized to monitor for the inadvertent restoration of power. This issue has been identified in separate, prior inspections of other types of WMATA equipment as well. Equipment not meeting calibration certification must not be used to ensure employee safety.

Corrective Action: WMATA must develop a procedure or checklist to ensure all work equipment is checked and inspected prior to use, and ensure that there is enough certified safety equipment available to meet all RWP requirements for each work crew. WMATA also must develop a procedure to track certification dates of all safety-related equipment to ensure that devices like WSADs are consistently re-calibrated and certified on schedule.

WMATA does not have a clear definition of a train “in approach” to a foul time area, which leads to inconsistent use of checklists and inconsistent radio communication that could cause a train operator to be unaware of work crews on the tracks ahead.

ROCC foul time checklists did not identify whether approaching train operators had been informed of an upcoming red signal per MSRPH subsection 5.13.5. The foul



Finding 7:

time procedure requires ROCC personnel to warn nearby train operators of the red signal after it is set, and to notify the work crew of the Train IDs contacted. During an inspection of the foul time check lists, only 1 out of 22 Foul Time Checklists sampled identified a train on approach that was contacted. According to ROCC management, there were no trains in approach to the foul time areas in the 21 of 22 checklists where no train was noted. This suggests controllers may be incorrectly or inconsistently applying the notification requirements because there are no specific parameters on what constitutes a train in approach. This communication requirement, checklist, and space to fill in the train ID contacted, provide another layer of protection for workers, and must include all relevant details as required by the MSRPH.

Corrective Action: WMATA must update MSRPH subsection 5.13.5 to specify when a train is considered “in approach” to trigger a required documentation on a written checklist along with a verbal warning over the radio that the train is approaching a red signal due to foul time. Proper radio communication must not be limited only to circumstances in which a train is actually required to “hold” at the signal, because the warning is necessary as a redundant form of protection for the work crew in the foul time area. Controller training must include the specific procedures required for foul time, including any updates to procedures due to this CAP. The checklist must be updated to reflect the revised policies.

WMATA’s TSMT department has not reviewed its RWP SOP annually as required.

Section 13.3 of the RWP SOP that states it will be reviewed annually by TSMT. There has been a gap in the review process, as the last review was June of 2016. Such a review is important to verify that all RWP SOPs are updated to reflect the current realities of the system so that the rules meet all requirements to keep employees, contractors and others safe.

Corrective Action: WMATA must review and update the RWP SOP procedures each year, as required by Section 13.3, and develop a matrix that notifies the document managers when revisions to the SOP are required.

Finding 8:

The responsibility for RWP contractor training does not follow the RWP SOP Section 2.2.

This section in the SOP states that SAFE is responsible for all Contractor RWP Training; however, SAFE currently conducts Level I RWP contractor training and TSMT conducts Level II RWP contractor training.

Finding 9:

Corrective Action: WMATA must define which RWP classes are facilitated by SAFE and which RWP classes are facilitated by TSMT. WMATA must conduct a study to determine if bringing all RWP classes under TSMT would improve consistency with the program and consolidate the program, if warranted.

Practical exercises and testing in RWP classes are not standardized, which could lead to workers getting Level II or Level IV certification without proper instruction.

During the WMSC's audit of RWP courses conducted in October and November 2019 it was observed that each RWP instructor followed different procedures while conducting practical exercises. Instructors are inconsistent in administering practical exercises during classes for RWP levels II and IV. This could lead to employees or contractors improperly using safety equipment or having differing understandings of safety requirements, which would put themselves and others at risk.

Corrective Action: WMATA must develop and use a detailed instructor's guide listing all practical exercises and steps for those practical exercises to ensure consistency and accuracy. The guide must specify what specific skills students must demonstrate in order to pass each class.

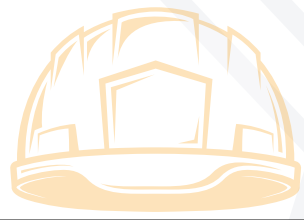
Finding 10:

RWP Instructors are not consistently participating in required three-hour experiential visits in the ROCC as specified in Section 7.5 of the RWP SOP.

RWP section 7.5 states "Each instructor designated to conduct and/or support RWPT [Roadway Worker Protection Training] will participate in a maintenance or inspection event conducted on WMATA's roadway at least three times per year. Each instructor will annually participate in at least a three-hour event in the ROCC." Field and ROCC visits are important because they provide an opportunity for instructors to observe the real-world application of the RWP rules and procedures that they teach. However, TSMT did not have records to indicate that instructors have had these three-hour visits as required, and instructors reportedly did not receive this opportunity until 2019. Additionally, this was also a finding in the FTA's 2018 Special Directive 18-2 requiring Metrorail to address Tri-State Oversight Committee findings that stated "The Office of Technical Skills and Maintenance Training's roadway protection instructors lack practical on-the-job experience." Metrorail took the first steps toward addressing this finding in 2019, but the WMSC requires Metrorail to fully meet its training standards.

Corrective Action: WMATA must develop an annual schedule for ROCC and field visits and review it quarterly to ensure that the roadway and field visits are being met as required in the SOP.





Finding 11:

WMATA has not submitted the RWP SOP and other relevant material to SAFE and MTPD for review as required.

RWP SOP section 13.2.5 states, “All curriculum, guidelines, policies and processes shall be submitted to SAFE and MTPD for review and compliance with the SSPP and SEPP.” Based on interviews with SAFE and MTPD personnel, this requirement is not being followed, despite the critical safety importance of the RWP program.

Corrective Action: WMATA must ensure that SAFE and MTPD review the training curriculum and procedures as well as any changes to those policies, and formally sign off on each update or revision as required by SOP 13.2.5.

Next Steps

Consistent with the [WMSC Program Standard](#), WMATA is required to propose CAPs for each finding no later than 45 days after the date of this report. Each proposed CAP must include a specific and achievable planned action to remediate the deficiency, the person responsible for implementation, and the estimated date of completion. These proposed CAPs must be approved by the WMSC prior to WMATA implementation.





750 First St. NE • Ste. 900 • Washington, D.C. 20002 • 202-384-1520

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